COPY FOR YOUR
INFORMATION

JAN 10 1989

5HS-11

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Stephen W. Holt
Project Coordinator
Environmental Control Dept.
NL Industries, Inc.
P.O. Box 1090
Hightstown, NJ 08520

Dear Mr. Holt:

Pursuant to Paragraph 17 of the Remedial Investigation/Feasibility Study (RI/FS) Administrative Order by Consent (Order), the U.S. Environmental Protection Agency (U.S. EPA) and Illinois EPA hereby approve the September 1988, RI Report with the necessary changes presented below. If NL Industries does not respond to these changes within 15 calendar days of receipt of this letter, then the September 1988 RI Report, with necessary changes, shall be considered an integral and enforceable part of the RI/FS Order. The following are necessary changes to the September 1988 RI Report.

1. It shall be noted that U.S. EPA and Illinois EPA disagree with the last two sentences of the "Risk Assessment" Paragraph on page E-5 and the fifth sentence in the last paragraph on page 84.

2. It shall be noted in the second paragraph on page 83 and the last paragraph of page 84 that i) U.S. EPA and Illinois EPA contend that due to the absence of a toxicity value for lead in soil, a quantitative risk assessment cannot be performed at the present time for lead in soil, ii) in lieu of a quantitative risk assessment for lead in soil, U.S. EPA and Illinois EPA have adopted the recommendation of the Center for Disease Control, namely: "In general, lead in soil and dust appears to be responsible for blood lead levels in children increasing above background levels when the concentration in soil or dust exceeds 500-1000 ppm.," and iii) since several samples in the residential areas east of the site and in the remote fill areas in Venice and Eagle Park Acres exceeded 500-1000 ppm lead, U.S. EPA and Illinois EPA contend that a potential unacceptable risk to public health exists in these areas.

3. It shall be noted that with respect to remedial response objectives and criteria discussed on page 37 and table 10, U.S. EPA and Illinois EPA contend that the remedial response objectives and criteria will be determined by the Center for Disease Control recommendation, current toxicity data, and current policy, as well as by the risk assessment in the RI Report.

The specific problems that U.S. EPA and Illinois EPA observed with the three risk assessment approaches presented in the RI Report are outlined in the attachment to this letter. This letter, the November 4, 1988 letter from U.S. EPA to NL Industries, the December 16, 1988 letter written by Bonnie Fine Kaufman, Counsel for NL Industries, and any new material regarding the toxicity of lead will be part of the Administrative Record for review with respect to the Record of Decision for the NL Industries-Granite City, Illinois Site.

Please contact me at (312) 886-4742 if you have any questions concerning this letter.

Sincerely yours,

Brad Bradley
U.S. EPA Project Coordinator

Attachment

cc: Ken Miller, IEPA
Nancy Mackiewicz, IAG
Frank Hale, OB & G

bcc: B. Kush, IL/IN #3
R. Grimes, 5CS-TUB-03
D. Dolan, 5HS-13

P847-300-512
Certified mail

File:c-lHolt.D#7;myr;RERB;IL/INUnit3;(Bradley)12/27/88

Attachment to approval letter

Remedial Investigation Report
Granite City Site
Granite City, Illinois
September 1988

Introduction

The Remedial Investigation Report (RI) was completed by O'Brien and Gere Engineers, Inc. for NL Industries, Inc. under a Consent Order with USEPA and IEPA. The USEPA and IEPA have provided oversight during the performance of the required work. The two agencies believe that this report accurately presents the site conditions with the exceptions noted in the approval letter.

The primary problems the IEPA and USEPA observe with the report lie in the assessment of risks associated with contaminants (presented in Section 8) and the conclusions drawn from this assessment. The Risk Assessment was conducted by O'Brien and Gere using the following three approaches:

1. The Illinois Department of Public Health Blood Lead Survey Approach;

2. The Acceptable Daily Intake Approach;

3. Soil Lead-Blood Lead Correlation Approach.

The methodology and/or assumptions used in these approaches is flawed or inappropriately used as summarized and specifically discussed below.

The Blood Lead Survey cannot be used to support the report's conclusion of no unacceptable human health impacts in light of its limitations.

The Acceptable Daily Intake Approach is fundamentally flawed and cannot be used in assessing the risks associated with exposures to lead. The toxicity data needed for this approach is under revision and therefore cannot be used.

The Soil Lead-Blood Lead correlation approach used in the risk assessment does not reflect a worst case scenario by using a conservative correlation ratio.

The conclusion presented in the report i.e., "risk assessment indicates no unacceptable impacts to human health from lead on the Site or in the surrounding community" is not supported by the site data or the risk assessment in light of the associated problems.

The Illinois Department of Public Health Blood Lead Survey Approach: The Illinois Department of Public Health (IDPH) cross-sectional blood lead survey of 1982 does not provide adequate evidence to support the RI report's conclusion that there are no unacceptable impacts to human health from lead in the area around the site. The 1982 blood lead survey was strictly a screening mechanism. The sample timing (Nov. and Dec. 1982) cannot be considered a peak exposure period and the relatively small sample size limits the extent to which conclusions can be extrapolated to the rest of the population in the area. Generally the blood lead of a population tends to be highest in the late summer or fall, however, there is considerable variation among communities, depending on the local climate and terrain. There are several published studies which would allow one to estimate the magnitude of this relationship in a population. The rate of decline from the peak blood lead ranges from 2.3 - 8.8 percent/month. A reasonable estimate is approximately percent/month. Thus, one could estimate that the mean blood lead level in the Granite City population would have been 15-20 percent higher had the survey been conducted in the late summer or fall, instead of in November and December.

The Acceptable Daily Intake Approach: The Acceptable Daily Intake (ADI) Approach taken in the risk assessment for lead is not supported by the USEPA or IEPA at the present time.

This approach is inappropriate since the Acceptable Intake for Chronic oral exposure (AIC) value in the Superfund Public Health Evaluation Manual (EPA/540/1-86/060, October 1986) was withdrawn by the Agency because of concerns regarding its adequacy. The use of an "adjusted" AIC (60% of AIC) based on the withdrawn AIC for risk assessment purposes is not appropriate since it appears that some health effects of lead, particularly changes in the levels of certain blood enzymes and in aspects of children's neurobehavioral development, may occur at blood lead levels so low as to be essentially without a threshold. The development of a revised AIC is under review by USEPA at this time. Once a revised AIC is issued, a properly conducted ADI approach can be used for lead.

Soil Lead-Blood Lead Correlation Approach: The rationale for rejection of the soil lead-blood lead approach in the Risk Assessment is as follows: a number of researchers have conducted studies which describe the positive relationship between lead in soil and children's blood lead and have constructed multiple linear regression models that show soil lead frequently contributes to explaining children's blood lead levels. A range of values for the slope of the relationship between soil lead and children's blood lead levels are found. The soil lead-blood lead correlation approach developed in the Risk Assessment simply takes a slope from the lower end of this range of

slopes (2 ug/dl increase in blood lead per 1000 ppm soil lead). Use of a higher slope value from the literature (6.8 ug/dl), which is equally justifiable, would yield tolerable soil lead levels in the 500-1000 ppm range (735 ppm) recommended by the Center for Disease Control.

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. †(Extra charge)† 2. ☐ Restricted Delivery †(Extra charge)†

3. Article Addressed to:
Mr. Stephen W. Holt
Project COordinator
Environemntal Control Dept.
NL Industries, INc.
P.O. Box 1090
Highstown, NJ 08520

4. Article Number
P 847 300 512

Type of Service:
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery
1/13/89

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 DOMESTIC RETURN RECEIPT